

Census Bureau Index of Economic Activity Frequently Asked Questions

1. What is the Census Bureau Index of Economic Activity (IDEA)?

The Census Bureau's IDEA is an aggregation of 15 of the Census Bureau's primary economic data series that provides a single time series constructed as a weighted average. It is a monthly index, constructed from time series of estimated monthly growth rates of these 15 series.

2. Which monthly economic data series are included in the Census Bureau Index of Economic Activity (IDEA)?

Series	Source
Business Applications	Business Formation Statistics
Exports of Goods and Services	International Trade: Goods & Services
Housing Units Authorized in Permit-Issuing Places	New Residential Construction
Housing Units Completed	New Residential Construction
Housing Units Started	New Residential Construction
Imports of Goods and Services	International Trade: Goods & Services
Manufacturing Inventories	Manufacturers' Goods
Manufacturing Value of New Orders	Manufacturers' Goods
New Orders for Durable Goods	Advance Report Durable Goods
New Single-Family Houses for Sale	New Residential Sales
New Single-Family Houses Sold	New Residential Sales
Retail Inventories	Advance Economic Indicator Report
Retail Trade and Food Services Sales	Advance Monthly Retail Trade
Total Construction Spending	Construction Spending
Wholesale Trade Inventories	Advance Economic Indicator Report

3. How often will the Census Bureau Index of Economic Activity (IDEA) be updated?

The IDEA will be updated each business day to ensure it reflects each new and/or updated published value(s) of the input data series. There will be some days where no input series change, and the index value will remain the same as it was on the previous day.

4. What datasets will be provided as part of the Census Bureau Index of Economic Activity (IDEA)?

Three datasets will be updated each business day that will include:

- Monthly IDEA values back to August 2004
- IDEA input values including published economic data series values
- Principal component weights for each of the input economic data series

All daily vintages of the above datasets will be available for download.

In addition, the dataset of nowcasted values for economic data series that were used to compute the index before they were published for the current month will be available for download at the end of the data processing month.

5. Does the Census Bureau Index of Economic Activity (IDEA) use any confidential data in its construction?

No. The IDEA uses only publicly available data in its construction.

6. Where will I be able to view the Census Bureau Index of Economic Activity (IDEA) and access the datasets?

The IDEA will live at the top of the Census Bureau Briefing Room webpage, <https://www.census.gov/economic-indicators/>. Datasets can be accessed on the “Downloads” tab within the visualization on this webpage.

7. Are there plans to add other data series to the IDEA in the future?

We continue to explore adding other relevant economic data series to the IDEA in the future. We are also researching how to incorporate other series that are not on a monthly frequency like the Quarterly Services Survey.

8. The inputs to the IDEA are “growth rates” but the economic data series in the visualization are displayed as percentage changes. Is a growth rate different from a percentage change?

With respect to the IDEA, the term “growth rate” refers to the $\log(\text{current month value}) - \log(\text{prior month value})$. 100 times the growth rate is approximately equal to the month-to-month percentage change when the latter is less than 20 percent in magnitude. This approximation deteriorates for percentage changes of larger magnitude.

The month-to-month percentage changes for each monthly economic data series included on the IDEA plots match the values provided by each economic data product in the Briefing Room (<https://www.census.gov/economic-indicators/>).

9. Are the “growth rates” for the inputs to the IDEA based on seasonally adjusted data?

Yes, all input data series are seasonally adjusted. Read more about Census seasonal adjustment at <https://www.census.gov/topics/research/seasonal-adjustment.html>.

10. The Census Bureau Index of Economic Activity (IDEA) data visualization has bands of various shades of blue behind the graph. What do the colors mean and how can I use them to understand the IDEA?

The IDEA time series is presented in a process control chart. Control charts are useful because they help distinguish between variation that is inherent in a process and is therefore expected versus variation that is unusual and, in many cases, unexpected. Recall that the IDEA combines measures from fifteen distinct monthly series into a single (standardized) series with a mean of zero and a standard deviation of 1. Consequently, the centerline of the control chart is at zero. The chart highlights four distinct regions: (1) values falling within ± 1 standard deviation of the centerline (darkest shade of blue in Figure 1), (2) values below ± 2 standard deviations and above ± 1 standard deviation of the centerline (third lightest shade of blue in Figure 1 below), (3) values below ± 3 standard deviations and above ± 2 standard deviations of the centerline (second lightest shade of blue in Figure 1 below), and (4) values above ± 3 standard deviations of the centerline (lightest shade of blue in Figure 1 below).

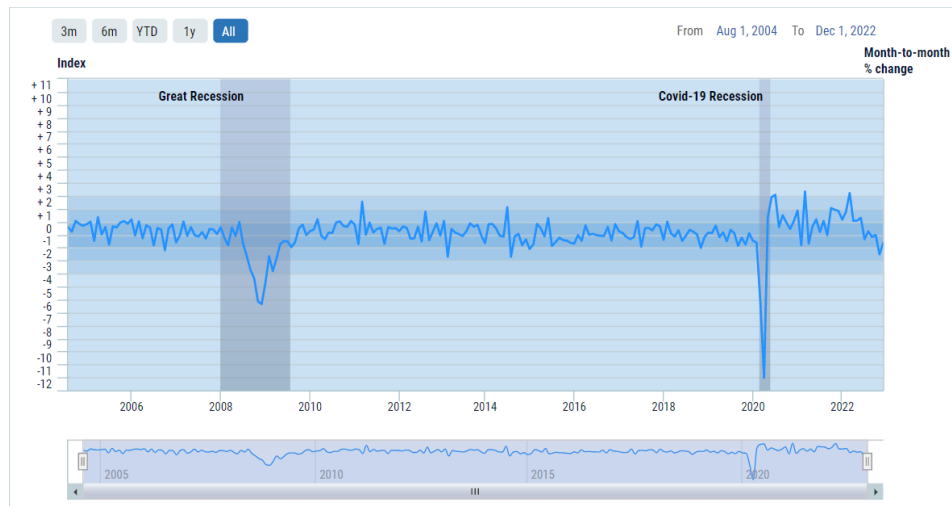


Figure 1: IDEA Data Visualization

All processes – including the IDEA – have some form of variation. Regardless of how well a production process operates, there will always be an inherent or natural variability that exists. This natural variability or “background noise” is considered normal while the data points fall within determined limits or do not exhibit a trend. In the framework of statistical quality control, this variability is often referred to as “a stable system of chance causes.” A process that is operating with only chance causes of variation present is said to be in statistical control.

Few processes remain stable forever. The IDEA process could, for example, be affected by an economy-wide event, or one of the component series might be affected by a major weather event. Sources of variability that are not part of the chance causes of variation are called “assignable causes” or “special causes.”

In monitoring the IDEA control chart, we recommend considering the following indicators to assess stability (Tague 2004) using the bands in various shades of blue as a guide:

- A single point plots outside the control limits (lightest shade of blue);
- Four out of five consecutive points plot on the same side of the centerline exceed 2 standard deviations (second lightest shade of blue);
- Two out of three consecutive points that plot on the same side of the centerline exceed 2 standard deviations (third lightest shade of blue);
- Eight consecutive points plot on the same side of the centerline (in any of the blue bands);
- An obvious consistent, nonrandom pattern (e.g., an upward or downward monotone trend).

Tague, N.R. (2004). The Quality Toolbox (2nd Edition). ASQ Quality Press.